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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/579,328	05/15/2006	Stephane Revol	290905US6X PCT	2136
22850	7590	03/26/2010		
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER				
MALEKZADEH, SEYED MASOUD				
ART UNIT		PAPER NUMBER		
1791				
NOTIFICATION DATE		DELIVERY MODE		
03/26/2010		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/579,328

Applicant(s)

REVOL, STEPHANE

Examiner

Seyed M. Malekzadeh

Art Unit

1791

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 December 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-30, 32 and 34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-30, 32 and 34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI/08)
- Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)

Paper No(s)/Mail Date _____

- 5) ☐ Notice of Informal Patent Application

- 6) ☒ Other: An english abstract for reference JP 4-97964.

DETAILED ACTION

Continued Examination under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/22/2009 has been entered.

Response to Amendment

Claims **16- 30, 32, and 34** maintain **rejected**.

Claims **1- 15, 31, 33, and 35** are **cancelled**.

In view of the amendment, filed on 12/22/2009, following **rejections** are **withdrawn** from the previous office action for the reason of record.

- Rejection of claims 16- 18, 26, and 29- 33 under 35 U.S.C. 102(b) as being anticipated by Zahrah et al (US 6,402,500)
- Rejection of claims 19- 24 and 34- 35 under 35 U.S.C. 103(a) as being unpatentable over Zahrah et al (US '500) in view of Souers et al. (US 5,296,202)

- Rejection of claim 25 under 35 U.S.C. 103(a) as being unpatentable over Zahrah et al (US '500) in view of Souers et al (US '202) and further in view of Olson et al. (US '613)
- Rejection of claims 27- 28 under 35 U.S.C. 103(a) as being unpatentable over Zahrah et al (US '500) in view of Bottoms (US 3,780,887)

New Grounds of the Rejection

35 USC § 112, first paragraph

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims **16- 30, 32, and 34** are rejected under 35 U.S.C. **112, first paragraph**, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 16 recites "each of the at least one deflectors being above at least one, **but not all**, of the sections of the mold" which was not described in the

specification or disclosure of the instant application. Therefore, the claim fails to comply with the written restriction requirement and the limitation is treated as **“new matter”**.

Negative limitations in the claims must have explicit support in the specification to satisfy the description requirement of 35 USC 112, *In re Grasselli*, 231 USPQ 393.

35 USC § 112, second paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims **16- 30, 32, and 34** are rejected under 35 U.S.C. **112, second paragraph**, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim **16** recites “an internal volume **virtually** divided” which renders the claim indefinite because the term “virtually” is not defined by the claim, the specification does not provide a standard for ascertaining the scope of the virtually, and one of ordinary skill in the art would not be reasonably apprised of the scope of the claim.

Claim **16** recites the limitation **“the sections of the mold”** in the ninth and twelve lines of the claim 16. There is insufficient antecedent basis for this limitation in the claim because prior to the recitation, the claim recites that the mold having an internal volume divided into several sections, but the claim

does not indicate anywhere that the actual mold includes a plurality of sections. By recitation of "the sections of the mold", does the claim refer to the sections of the "internal volume" or " mold cavity"? Clarification is requested.

Claims **16 and 30** recite "the section of the mold **above** which the at least one deflector is placed" which means that the sections of the **mold** are positioned **above** the **deflector** while earlier the claim 16 indicates that "at least one **deflector** placed **above** the **mold**" (see eighth line) Therefore, the claim contain contradictory limitations. Clarification is requested.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 16- 18, 26, 29- 30, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zahrah et al (US '500) in view of Kita (JP 04- 97964)

Zahrah et al (US '500) teach a delivery and filling system for filling a mould cavity (124) with a particulate material such as powder wherein the system comprises a mini-hopper (10) and collimator (126) as a means for adding at least one powder into the filling device including a powder inlet and a powder outlet in which the mini-hopper (10) has the same structural functionality as a receptacle, an individualized fluidizer (114) as an introducing pipe with an entrance orifice, a porous distributor plate (104) as a means for ejecting the powder added into a location of the device, and a bowl section, as a deflector, positioned above the mold cavity (124) in which locally intercept and redirect part of the powder ejected from the ejector means towards the mould cavity (124). (See lines 11-67, column 15 and figures 4A - 4B)

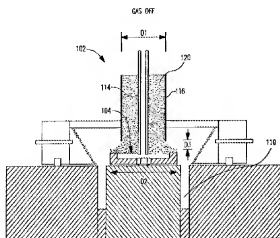


FIG. 4A

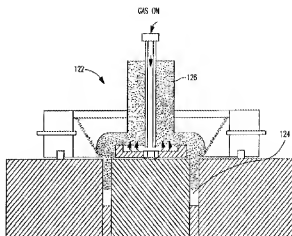


FIG. 4B

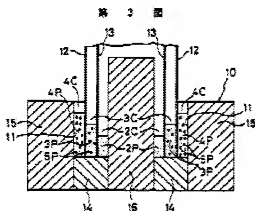
Zahrah et al (US '500) further teach the delivery chute (122) is centered above the die cavity (124) by pushing and moving the fill-shoe. (See lines 52-61, column 15) Therefore, Zahrah et al (US '500) teaches the deflector is mobile and orient-able.

Moreover, Zahrah et al (US '500) disclose the means (126) for adding powder includes a powder inlet and a powder outlet, and further the deflector is a part of an internal wall of the ejecting device.

However, Zahrah et al (US '500) **fail to teach** the internal volume of the mould cavity is divided into an array of several sections, as claimed in claim 16.

In the analogous art, Kita (JP '964) teaches a molding apparatus for molding powdered bonded articles made by ceramic and metallic powders in which the molding apparatus (10) comprises a mold cavity (11), an outer die (15) with a circular hole, a bottom die (14), and a columnar die (16) which are

divided by partition plates (12 and 13) into plural loop- shaped sections (2C, 3C, and 4C) wherein each of the plural sections are fed by a particular feeding powder mixtures (2p, 3p, and 4p), respectively. (See abstract and figure 3)



Therefore, **it would have been obvious** for one of ordinary skill in the art at the time of applicant's invention to modify the molding apparatus as taught by Zahrah et al (US '500) through **providing** a mold cavity with an array of the divided sections to receive powder from the filling device **in order to** maximize the product-ability of the molding apparatus while filling each cavity section with a particular powder, as suggested by Kita (JP '964).

Furthermore, it has been held that a mere change in shape without affecting the functioning of the part would have been within the level of ordinary skill in the art, *In re Dailey et al.*, 149 USPQ 47; *Eskimo Pie Corp. v. Levous et al.*, 3 USPQ 23. Thus, a mere change in the shape of the mould cavity of the Zahrah et al (US '500) to form a mould cavity with an array of the divided sections, as suggested by Kita (JP '964) is within the level of ordinary skill in the art.

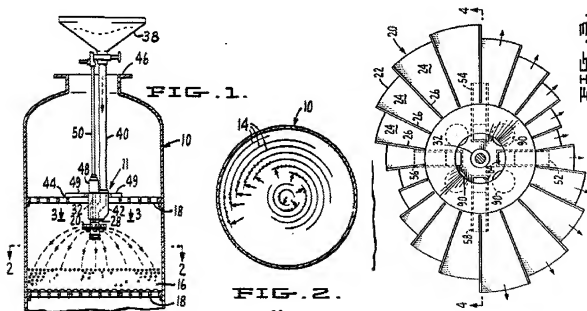
Claims 19- 24 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zahrah et al. (US 6,402,500) in view of Kita (JP '964) and further in view of Souers et al. (US 5,296,202)

Combined teachings of Zahrah et al. ('500) and Kita (JP '964) teach all the structural limitations of a device for filling at least one mold with the powder, as discussed above in the rejection of the claims as applied to claims 16- 18, 26, 29- 30, and 32. Further, as recited above, Zahrah et al. ('500) teach a mean for ejecting the powder includes a tray as a lower part, a collimator (126) as an upper part and an entrance orifice (114) as a powder inlet and a powder outlet, wherein a space is located between the tray as the lower part and the collimator (126), as the upper part. (See figures 4A- 4B and 5B)

However, the combined teachings of Zahrah et al. ('500) and Kita (JP '964) **fail to teach** rotating the ejecting means for ejecting powder as a rotating device which is in a shape of a disk, a cone, or a bowl, and includes at least one rib, as claimed in claims 19- 21 and 23- 24.

In the analogous art, Souers et al (US '202) teach an apparatus for simultaneously distributing particles across the full diameter of particles across the full diameter of the bed with a single rotor wherein the apparatus comprises a large diameter catalytic reactor vessel (10), a hopper (38), a supply tube (40), a catalyst loading apparatus (11), a lower feed hopper (42), a feed tube (28), and a catalyst distribution rotor member (20) as a disk-like rotating

device in which the disk-like rotating device (20) comprises a plurality of sectors or segments (24) with rib members (26), a drive shaft (32) for the rotation of the rotor member (20), (See column 7 and lines 12-50, column 8; further, figures 1 and 3) wherein the particles are distributed by the single disk-like member across the full diameter of the bed with substantially uniformly high density through forming a multiplicity of annular rings of the powder concentric with the center of the vessel or bed. (See lines 62-68, column 4)



It would have been obvious for one of ordinary skill in the art at the time of applicant's invention to modify the device for the powder filling of the mold as taught by the combined teachings of Zahrah et al (US '500) and Kita (JP '964) through **providing** a disk-like rotating device with ribs as an ejection

mean for the filling of the mold **in order to** uniformly distribute the powders within the mold cavity in such a way that the powders have a high density, as suggested by Souers et al (US '202)

Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zahrah et al. (US '500) in view of Kita (JP '964) and Souers et al. (US '202) and further in view of Olson et al. (US 4,437,613)

The combined teachings of Zahrah et al. (US '500), Kita (JP '964), and Souers et al. ('202) teach all the structural limitations of a device for filling at least one mold with the powder, as discussed above in rejection of claims 19-24 and 34; **however, fail** to teach the rotating device includes a curved tube, as claimed in claim 25.

In the analogous art, Olson et al. (US '613) teach a particle spreading apparatus as a powder spreading apparatus for dispersing particles in which the apparatus includes grain storage bin (18), a grain conveyor (37), a distributing apparatus (10) comprising a rotating shaft (17), a grain holding unit (12), a cylindrically shaped drum (19), and an output tube (26), wherein the particles holding unit may be selectively rotated about the mounting unit by appropriately controlling the motor in order to evenly distribute the particles throughout the particle storage bin. (See lines 60-68, column 2 and lines 1-20, column 3; figures 2-3)

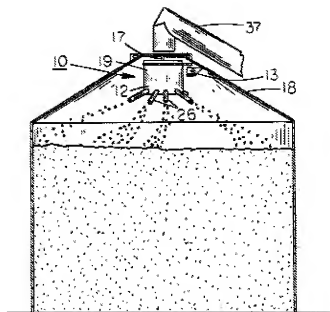


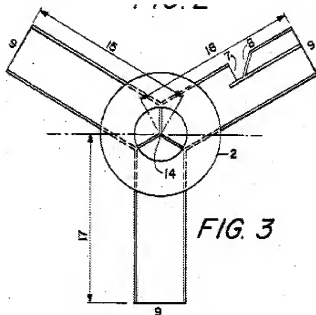
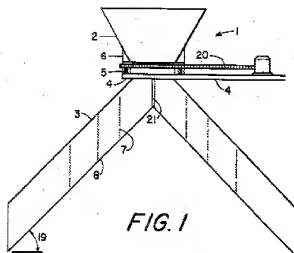
FIG. 2

It would have been obvious for one of ordinary skill in the art at the time of applicants' invention to modify the device for powder filling of the mold as taught by combined teachings of Zahrah et al. ('500) in view of Kita (JP '964) and Souers et al. ('202) through **providing** a curved tube for the rotating device of the ejection apparatus for distributing the powder within the mould cavity **in order to** effectively control the distribution of the powders through the mold cavity and also to fill the mould cavity with even layers of powder, as suggested Olson et al. (US '613)

Claims 27- 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zahrah et al. (US 6,402,500) in view of Kita (JP '964) and further in view of Bottoms (US 3,780,887)

The combined teachings of Zahrah et al. ('500) and Kita (JP '964) teach all the structural limitations of a device for filling at least one mold with the powder, as discussed above in rejection of claims 16- 18, 26, 29- 30, and 32, **however, fail to teach** at least one deflector is placed in parallel with a rotation axis so as to be perpendicular to a median ejection plane of the powder layer, as claimed in claims 27 and 28.

In the analogous art, Bottoms (US '887) teach a rotary distributor apparatus (1) with inclined conduits stream dividers and multiple discharge ports comprising a receiving mean (2), an optional dust shield (6), a conventional bearing (5), a fixed support (4), distributing conduits (3), drive means (20) which rotates the receiving mean (2), and dividers (7 and 21) as deflectors, wherein the powder material can be uniformly distributed in a vessel by amount and by particle size radially from the axis of rotation at each level in the vessel, (See lines 15-22, column 1) and, further, the dividers (7 and 21) as deflectors divide a stream of particulate material passing downwardly through the conduit (See lines 39-47, column 1) in which the deflectors (7 and 21) are in parallel with the rotation axis of receiving means (2) and also the deflectors (7 and 21) are in perpendicular position relative to the plane in which the fixed support (4) is positioned. (See figures 1 and 3)



It would have been obvious for one of ordinary skill in the art at the time of applicants' invention to modify the device for powder filling of the mold as taught by the combined teachings of Zahrah et al. ('500) and Kita (JP '964) through **positioning** a plurality of deflectors in parallel with the rotation axis of the ejecting device in such a way that the deflectors are placed in a perpendicular direction to the median ejection plane **in order to** efficiently and effectively divide a stream of the powders passing downwardly to different parts and also to uniformly distribute the powders within the mould cavity, as suggested by Bottoms et al. (US 3,780,887)

Examiner's Note

Claim 23 recites "through which the powder enters and the powder being able to escape through the space between the lower and the upper parts" (See lines 3-4), and **claim 24** recites "such that inertia of the powder leaving the outlet is sufficiently high that the powder is projected outside the rotating device" (See lines 2-4); further, **claim 26** recites "quickly moves the at least one receptacle and stops the at least one receptacle suddenly so that the powder contained in the at least one receptacle is sprayed outside the at least one receptacle by inertia" (See lines 3-5). Also, **claim 32** recites "a thickness of the layer is smaller than an opening of a cavity of the mold". Further, **claim 34** recites "the rotating device ejects the powder at a direction between a horizontal and minus 90° of the horizontal".

All the above recitations are directed to the manner of operating the claimed apparatus and the powder material which is used in the claimed device, and the recitations do not further provide any structural limitations for the claimed apparatus. Therefore, the above recitations are directed to the **intended use** of the claimed apparatus.

Intended use has been continuously held not to be germane to determining the patentability of the apparatus, *In re Finsterwalder*, 168 USPQ 530.

The manner or method in which a machine is to be utilized is not germane to the issue of patentability of the machine itself, *In re Casey*, 152 USPQ 235,238.

Purpose to which apparatus is to be put and expression relating apparatus to contents thereof during intended operation are not significant in determining patentability of an apparatus claim, *Ex parte Thibault*, 164 USPQ 666.

A recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations, *Ex parte Masham*, 2 USPQ2d 1647.

See also *In re Yanush*, 177 USPQ 705 and *In re Casey*, 152 USPQ 235.

Response to Arguments

Applicant's **arguments** with respect to claims 16- 30, 32, and 34 have been considered but **are moot** in view of the new grounds of rejection. Specially, in response to applicant's argument in regard to the primary reference Zahrah et al ('500) and the newly added limitations, arguments were fully considered. However Zahrah et al ('500) does not teach the newly added limitations, in light of the new ground of the rejections and the presented secondary reference of Kita (JP '964), the arguments in regard to Zahrah et al ('500) are now moot.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seyed Masoud Malekzadeh whose telephone number is 571-272-6215. The examiner can normally be reached on Monday – Friday at 8:30 am – 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven P. Griffin, can be reached on (571) 272-1189. The fax number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published application may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Seyed M. Malekzadeh/

Art Unit: 1791

Examiner, Art Unit 1791

/Steven P. Griffin/

Supervisory Patent Examiner, Art Unit 1791